

includes] the core including at least one of laminated sheet plate, rough forged iron, cast iron and powder-based iron.

REMARKS

This Amendment is in response to the Office Action of February 25, 2002, in which the Examiner objected to a grammatical error in Claim 14. The error has been corrected in this Amendment. The Examiner also rejected claims over various references in view of Elton 565. According to the Examiner the primary references show various components of the invention and Elton employs a cable formed with a conductor with a inner and outer semiconducting layers and an intermediate solid insulating layer. The Examiner asserts that it would have been obvious to employ the cable of Elton 565 in order to prevent corona discharge.

Elton 565 does not teach the use of a high voltage cable as a winding in machines including transformers or rotating electrical machines. Elton on the contrary, teaches three separate applications for a pyrolyzed glass tape. The first application is for a conventional high current rotating machine which operates at relatively low voltage, as compared to transmission voltages. The second application is in a transmission power cable. There is no suggestion that the cable in Elton could be used as the winding in an rotating machine. Further, if such were attempted with the cable in Elton, such attempt would fail because the cable in Elton is stiff and would not form a wining which would withstand high voltage. If the cable in Elton is bent so as to form a winding in machine, the glass layer would crack forming sites for corona discharge. Thus, contrary

to Elton, corona discharge would not be prevented but would indeed be promoted. The third application is for an insulated housing which is irrelevant to the invention as well.

There is no suggestion in the art that a high voltage cable having the construction described and claimed may be employed as a winding in an electric machine. Even though the reference cited by the Examiner discloses that corona discharge may be reduced using the pyrolyzed glass layer of Elton, the reference does not suggest that the different devices employing such material are themselves interchangeable.

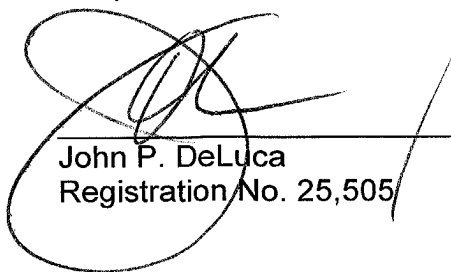
The various primary references merely show devices of the general type for which the high voltage cable of the invention can be employed. However, as indicated above, there is no suggestion that it would be useful to employ the cable of Elton in such devices. The art of high voltage cables is entirely different from the art of conventional machines, even machines which operate at high power, because high voltage cables operate at high voltage and low current whereas high power machines operate at moderate voltages as compared to high voltage cables. In addition the machines operate at high current in order to develop the high power output. The high current results in high temperature operation. High voltage cables do not operate with high current and are cooled in ambient. If a high voltage cable is employed in a machine it would suffer from heat effects associated with a confined space. This is but one reason why it would not be obvious to employ a high voltage cable in a machine.

The claims dependent from the rejected claims are believed to be allowable as depending from an allowable main claim.

Takaoka, is a high voltage cable designed to overcome "skin effect" which is a problem with transmission cables caused by the rapidly changing field. Takaoka insulates the outer strands to reduce skin effect. In the invention some of the outer strands are uninsulated in order to contact the inner layer and thereby establish the equipotential surface. In the invention, the insulated strands which form a majority of the strands have an insulating surface, e.g. an oxide layer which minimizes current paths within the conductor. The insulation does not provide an insulation to ground, but provides insulation between the strands which operate at the same or nearly the same voltage. Takaoka operates to reduce a different phenomenon, namely skin effect, while the invention reduces eddy current paths while allowing the voltage of the conductors to be transferred to the inner semiconducting layer in order to establish an equipotential surface. These different phenomena are different, have different effects and are handled in a different.

In view of the foregoing, it is respectfully requested that the Examiner reconsider his rejection of the claims, the allowance of which is earnestly solicited.

Respectfully submitted,



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